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Foreign
Assessment
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Lipetsk Iron and Steel Plant Novo Lipetsk, USSR

An Imagery Research Paper

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*Basic Imagery Interpretation Report
IS 78-10153, RCS-13/0012/78
August 1978*

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CENTRAL INTELLIGENCE AGENCY
National Foreign Assessment Center

INSTALLATION OR ACTIVITY NAME					COUNTRY	
Lipetsk Iron and Steel Plant Novo Lipetsk					UR	
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NUMBER	COMIREX NO.	NIFTS NO.	
NA	52-33-25N 039-38-22E					
MAP REFERENCE						
USATC, Series 200, Sheet 0166-21 HL, 6th ed, Jul 76, Scale 1:200,000						
LATEST IMAGERY USED			NEGATION DATE (If required)			
			NA			

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ABSTRACT

The Lipetsk Iron and Steel Plant is probably the third largest integrated iron and steel plant in the Soviet Union. In 1974 it produced 4,000,000 tons of steel. 1/ Output increased to 8,500,000 tons in 1977. 2/ By comparison, in 1977 the Magnitogorsk Metallurgical Combine produced 15,500,000 tons of steel and the Krivoy Rog Metallurgical Plant Lenin produced 14,000,000 tons. 3,4/ The Soviets predict an annual output of 16,000,000 tons of steel at Lipetsk by 1990. 5/

Soviet sources indicate that the rolled steel products of the plant include construction steel, sheet steel for the automobile industry, steel plate for shipbuilding, steel for high-pressure pipe, and silicon steel for electrical equipment. 1,6/

The plant began operation in 1934 but was destroyed during the Second World War. Reconstruction began in 1949 and by 1951 the plant was operating again. 7/ Lipetsk has undergone major expansion since 1972 with the construction of two coke oven batteries, a blast furnace, a basic oxygen furnace building, and a rolling mill. This expansion accounts for the doubling of steel production between 1974 and 1977.

At least one semidetached, one possible semidetached, and six detached civil defense shelters are located at the plant. Four detached shelters are located at nearby unidentified plants. These plants are probably associated with the iron and steel plant.

This report consists of a discussion of the plant and a photograph keyed to a table listing the plant's major facilities and civil defense shelters.

The information and judgments presented in this publication were derived principally from analysis of imagery. Although information from other sources has been included, this publication does not reflect an all-source assessment and has not been formally coordinated within CIA.

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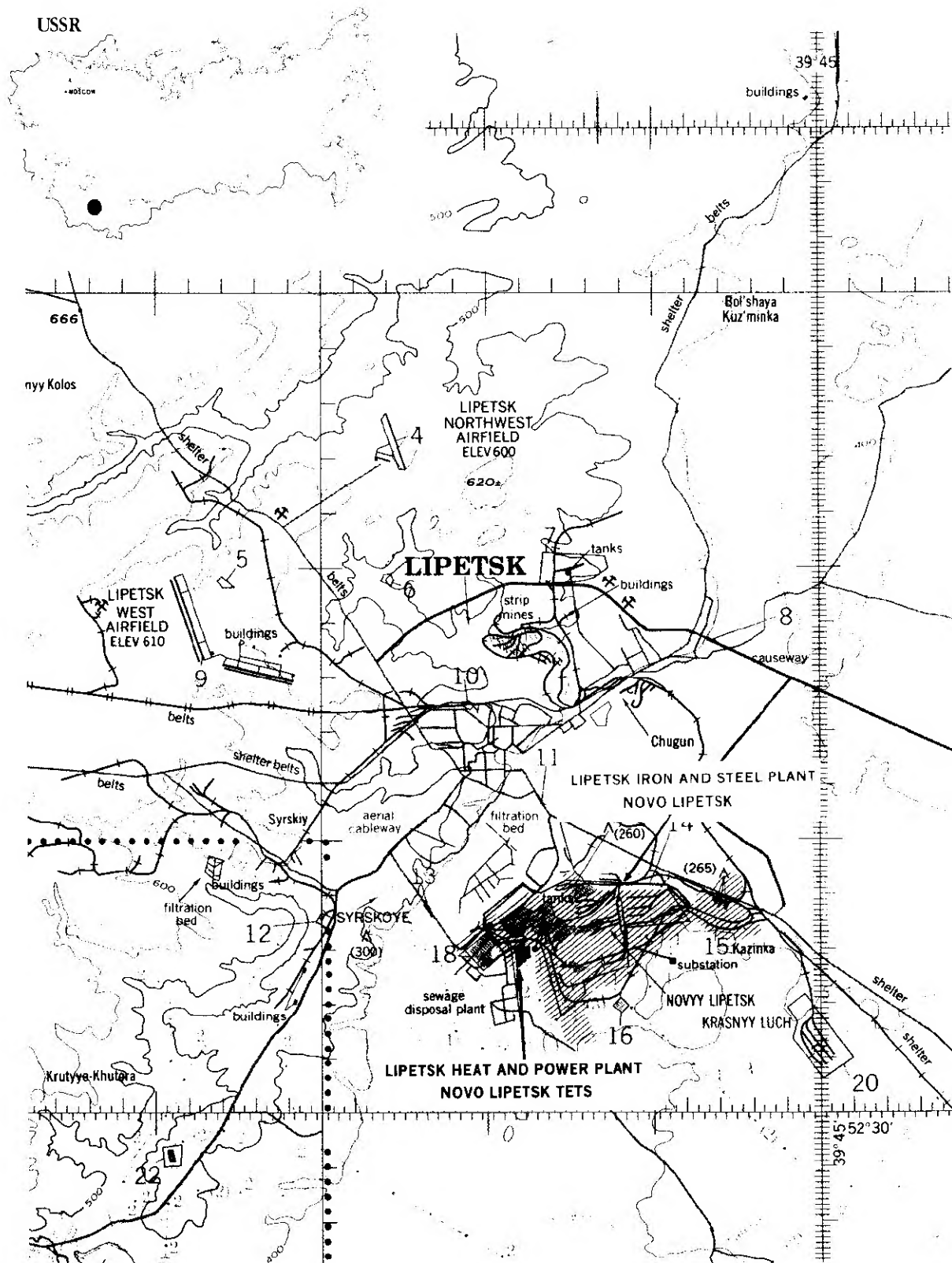


FIGURE 1. LOCATION MAP.

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INTRODUCTION

The Lipetsk Iron and Steel Plant Novo Lipetsk is located on the east bank of the Voronezh River in Novo Lipetsk, Lipetsk Oblast (Figure 1). Extensive road and rail networks serve the plant and it is partially wall secured. Its production areas occupy approximately 1,975 hectares. Steam and power are provided by the collocated Lipetsk Heat and Power Plant Novo Lipetsk TETS. The Lipetsk Tractor Plant is located immediately west of the iron and steel plant. Also located nearby are several unidentified industrial plants.

DISCUSSION

The Lipetsk Iron and Steel Plant Novo Lipetsk is probably the third largest integrated iron and steel plant in the USSR, producing 8,500,000 tons of steel in 1977. 2/ During the same year the Magnitogorsk Metallurgical Combine produced 15,500,000 tons of steel and the Krivoy Rog Metallurgical Plant Lenin produced 14,000,000 tons. 3,4/

In April 1978, facilities at Lipetsk included a sintering plant containing two sintering buildings (listed in the Basic Encyclopedia as the Lipetsk Iron Ore Sintering Plant), eight coke oven batteries, five blast furnaces, two basic oxygen furnace buildings, one electric furnace building, and five rolling mills (Figure 2). Other facilities included three pig iron casting buildings, a large coke byproducts plant, an air separation plant, three lime plants, an iron foundry, a forge shop, two ore processing plants, and three scrap metal processing buildings. A blast furnace, a rolling mill, a probable air separation plant, and an unidentified facility were under construction in April 1978. These additions, along with the planned construction of a third basic oxygen furnace building and two more electric furnaces, will help the Soviets to reach their goal of 16,000,000 tons of steel production annually at Lipetsk by 1990. 5,8/

Soviet sources indicate that the rolled steel products of the plant include construction steel, sheet steel for the automobile industry, steel plate for shipbuilding, steel for high-pressure pipe, and silicon steel for electrical equipment. 1,6/

All components of the plant were operating when observed on photography from 1972 to 1978.

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Civil Defense Measures

At least one semidetached, one possible semidetached, and six detached civil defense shelters are located at the iron and steel plant. Four detached shelters are located at nearby unidentified industrial plants. These plants are probably associated with the Lipetsk Iron and Steel Plant. Details regarding the shelters -- their type, size, association with plant facilities, location by geographic coordinates, and approximate construction date -- appear in Table 1 (Items 30-41) and they can be located by item numbers on Figure 2.

There is no photographic evidence of efforts to protect or "harden" production facilities within the plant. Hardening measures taken inside buildings for the protection of equipment obviously would not be observable on overhead photography. There are some revetted and some buried storage tanks at the plant, but this is a normal safety measure.

Table 1. Major Facilities and
Civil Defense Shelters at Lipetsk Iron and Steel Plant Novo Lipetsk
(Keyed to Figure 2)

Item	Facilities	Roof Cover (sq. m.)	Remarks
<u>Raw Materials Processing</u>			
1	Sintering plant		Contains 2 sintering buildings
2	Coke and coke byproducts plant		Contains 8 coke oven batteries and coke by-products processing equipment. Four batteries use the dry-quenching method for cooling coke.
3	Lime plant		Contains 2 rotary kilns
4	Lime plant		Contains 3 vertical kilns and 2 rotary kilns
5	Lime plant		Contains 4 rotary kilns
6	Ore processing plant and storage area		
7	Ore processing plant and storage area		

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Table 1. (continued)

Item	Facilities	Roof Cover (sq. m.)	Remarks
<u>Iron Production</u>			
8	Blast furnaces		Five blast furnaces -- two 1,260 cubic meter, two 2,000 cubic meter, one 3,200 cubic meter -- in a row 845 meters long. The 3,200 cubic meter furnace can produce 6,400-7,000 metric tons of iron per day. <u>6/</u>
9	Blast furnace under construction		Midstage of construction in April 1978. Volume of 3,200 cubic meters. <u>9/</u>
10	Pig iron casting building		Has 2 casting strands
11	Pig iron casting building		Has 2 casting strands
12	Pig iron casting building		Has 1 casting strand
13	Iron foundry	14,250	
14	Forge shop	30,600	
<u>Steel Production</u>			
15	Basic oxygen furnace building	21,600	Contains three 100-180 ton capacity furnaces. <u>6,7,10/</u>
16	Basic oxygen furnace building	35,200	Contains two or three 300-350 ton capacity furnaces. <u>10,11/</u>
17	Electric furnace building	12,200	Contains two 100-ton-capacity furnaces. Also contains continuous casting equipment. <u>6,7/</u>

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Table 1. (continued)

Item	Facilities	Roof Cover (sq. m.)	Remarks
<u>Rolled Steel Production</u>			
18	Rolling mill	18,215	
19	Rolling mill	201,730	
20	Rolling mill	170,265	Contains continuous casting equipment
21	Rolling mill	75,380	
22	Rolling mill	80,845	Contains continuous casting equipment
23	Rolling mill under construction	102,535	Midstage of construction in April 1978. Probable carbon steel cold-rolling shop, which will eventually produce 3,000,000 tons of cold-rolled steel sheet a year. <u>12/</u>
	section a	38,905	
	section b	17,130	
	section c	46,500	
<u>Miscellaneous</u>			
24	Air separation plant		Provides oxygen for blast furnaces and basic oxygen furnaces
25	Probable air separation plant under construction		
26	Scrap metal processing building	8,025	Prepares scrap for use in basic oxygen furnaces
27	Scrap metal processing building	15,735	Prepares scrap for use in basic oxygen furnaces
28	Scrap metal processing building	17,200	Prepares scrap for use in basic oxygen furnaces
<u>Power</u>			
29	Thermal power plant	12,520	Probably 300-350 megawatt capacity

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Table 1. (continued)

Civil Defense Shelters

Item	Type	Association	Floor Space (sq. m.)	Geographic Coordinates	Construction Dates
30	Detached	Coke production area	500	52-33-19N 039-35-22E	Between Sep 76 and Nov 77
31	Detached	Coke byproducts area	380	52-33-48N 039-35-51E	Between Sep 76 and Nov 76
32	Detached	Coke byproducts area	570	52-33-44N 039-36-07E	Between Sep 76 and Apr 78
33	Detached	Blast furnace	760	52-33-27N 039-35-57E	Before Nov 76
34	Possible semi- detached	Air separation plant	Undetermined	52-33-23N 039-36-31E	Before Sep 75
35	Semi- detached	Forge shop	190	52-33-36N 039-36-47E	Between Sep 75 and Nov 77
36	Detached with ramp	Unidentified building	580	52-33-48N 039-36-56E	Before Feb 75
37	Detached	Unidentified building	500	52-33-18N 039-37-10E	Under construction in Apr 78
38	Detached	Unidentified building	690	52-34-34N 039-38-56E	Between Sep 76 and Apr 78
39	Detached	Unidentified building	1,290	52-34-35N 039-39-24E	Between Sep 75 and Nov 77
40	Detached	Unidentified building	890	52-34-16N 039-39-35E	Between Sep 75 and Apr 78
41	Detached with ramp	Unidentified building	1,090	52-33-47N 039-39-18E	Before Feb 75

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Imagery

All pertinent photography from July 1972 through April 1978 was used in the preparation of this report.

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Requirement

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Support Number 480805 EN

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The author of this paper is [redacted] Economic Resources
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and should be directed to [redacted]

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